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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

May 10, 1983

UNITED STATES OF AMERICA,)
)
Plaintiff,)
)
FRANK J. KELLEY, Attorney General)
for the State of Michigan, FRANK J.)
KELLEY, ex rel. MICHIGAN NATURAL)
RESOURCES COMMISSION, MICHIGAN)
WATER RESOURCES COMMISSION, and)
HOWARD A. TANNER, Director of the)
Michigan Department of Natural)
Resources,)
)
Intervening Plaintiff,)
)
v.)
)
CHEMCENTRAL/DETROIT CORPORATION,)
)
Defendant.)

JUDGE JAMES P. CHURCHILL
Civil Action No. 80-73730

CONSENT JUDGMENT

This action having been filed on October 3, 1980, and the parties, United States of America, for the Administrator of the United States Environmental Protection Agency (hereinafter "EPA"), Frank J. Kelley, Attorney General for the State of Michigan, Frank J. Kelley, ex rel., Michigan Natural Resources Commission, Michigan Water Resources Commission, and Howard A. Tanner, Director of the Michigan Department of Natural Resources (hereinafter jointly referred to as "MDNR"), and CHEMCENTRAL/Detroit Corporation (hereinafter "CHEMCENTRAL/Detroit") by their respective attorneys having consented to the entry of this Consent Judgment.

NOW, THEREFORE, before the taking of any testimony, upon the pleadings, and without admission or adjudication of any issue of fact or law herein and upon consent of the parties hereto, it is hereby ORDERED, ADJUDGED, AND DECREED as follows:

I. JURISDICTION

This Court has jurisdiction over the parties and

subject matter of this action under 28 U.S.C. §1345, 42 U.S.C. §6901 et seq., and 33 U.S.C. §1251 et seq. This Court further has pendent jurisdiction of the parties and subject matter of this action with regard to claims under State of Michigan 1929 PA 245, the Water Resources Commission Act, and 1970 PA 127, the Anderson-Rockwell Environmental Protection Act.

II. PARTIES

This Consent Judgment shall apply to and be binding upon the parties and the successors and assigns of each, as well as any agencies, officers, directors, agents, and servants thereof acting in their respective official capacities. CHEM-CENTRAL/Detroit shall provide a copy of this Consent Judgment to each contractor which it obtains to perform work contemplated in this Consent Judgment. CHEMCENTRAL/Detroit continues to be solely responsible for compliance with this Consent Judgment.

III. THE SITE

CHEMCENTRAL/Detroit owns and operates a chemical distribution facility at 13395 Huron River Drive, Romulus, Michigan. That facility includes truck and railroad car loading and unloading docks, above and below ground storage tanks, a drum washing area and a warehouse area. That facility and adjacent property presently owned by CHEMCENTRAL/Detroit constitute "the Site." The Site is described more fully in Appendix A. Zink Drain, a navigable water of the United States and a water of the State, traverses the Site in an easterly direction. Groundwaters beneath the Site are also waters of the State.

IV. FINDINGS OF THE COURT AND OBJECTIVES OF THE CONSENT JUDGMENT

From a review of the matters before it, this Court finds that the terms and conditions of this Consent Judgment

are reasonable, that they adequately resolve the claims raised in this action, and that they are compatible with the objectives of this Consent Judgment, which are: ^①the elimination of conditions at and around the Site which might endanger health, welfare, or the environment; ^②the establishment of measures to prevent contamination of soil, groundwater, and surface water; and the ^③implementation of a restorative program for groundwater, surface water, soils, and sediments.

V. IMMEDIATE REMEDIAL ACTIONS

1. CHEMCENTRAL/Detroit shall not discharge to Zink Drain from its facility in violation of 33 U.S.C. §1251, et seq. or 1929 PA 245, the Water Resources Commission Act.

2. CHEMCENTRAL/Detroit shall not discharge to the ground and groundwater from its facility in violation of 1929 PA 245, the Water Resources Commission Act.

3. CHEMCENTRAL/Detroit shall, upon request by the user or resident, provide a connection to a municipal water source or, if such a connection is unavailable, shall install a well to provide potable water, for any present user or resident whose drinking water well is located downgradient and within 250 feet of the Site. (See Appendix B). CHEMCENTRAL/Detroit shall, upon request by any future user or resident located downgradient and within 250 feet of the Site, provide a connection to a municipal water source or, if such a connection is unavailable, shall install a well to provide potable water, for any such user or resident whose drinking water well, if installed, would produce water unfit for human consumption or other domestic purposes as determined by the Michigan Department of Public Health as a result of such water being drawn from within any plume of contamination originating from the Site.

VI. TESTING OF UNDERGROUND STORAGE TANKS
01H THROUGH 06H AND ASSOCIATED PIPING

CHEMCENTRAL/Detroit shall retain a consultant to commence Petrotite testing of storage tanks 01H, 02H, 03H, 04H, 05H, and 06H and associated piping (See Appendix C). Such testing shall be completed within sixty (60) days of completion of enclosure of the tank farm pursuant to paragraph VII.

VII. PLAN FOR ENCLOSURE OF TANK FARM

1. Within thirty (30) days of entry of this Consent Judgment CHEMCENTRAL/Detroit shall submit to EPA and MDNR for review and approval a plan to enclose the tank farm utilizing slurry walls. Such plan shall include the following:

a. Engineering specifications and a timetable for construction of bentonite - cement slurry walls extending into the first continuous low permeability clay layer and sufficient to enclose the tank farm.

b. Engineering specifications and a timetable for installation of a sump system designed to prevent the release of product to the environment from the enclosed tank farm, to detect any release of product from tanks or pipes in the enclosure, and to detect any failure in the physical integrity of the enclosure.

* c. Provisions for demonstration of compatibility of slurry wall material with contaminants found in the groundwater. *letter*

d. Provisions for removal of contaminants from soil in the tank farm and fill station areas within the enclosed area through soil flushing and groundwater purging within the enclosed area. Soil flushing shall be by means of precipitation or a substitute flushing system which will evenly

saturate soil. Purging shall be by means of the sump system described in VII.1.b. above.

e. Provisions for maintaining a negative head within the enclosed area.

f. Treatment of purged water if necessary to meet treatment effluent standards specified in Appendix E and disposal of purged water to the Wyandotte waste water treatment plant.

g. Maintenance and continuous operation of such purging mechanisms until groundwater contaminant concentrations in the encapsulated area are below levels specified in Appendix D.

h. Engineering specifications and a timetable for construction of an impermeable cap over all or a portion of the enclosed area and a flushing system to evenly saturate the soils beneath the cap in the event that CHEMCENTRAL/Detroit in its discretion decides, with EPA and MDNR approval, to install such a cap.

i. A schedule for implementation of each phase of the plan.

2. CHEMCENTRAL/Detroit shall repair or replace as necessary any portion(s) of the enclosure which fail to insure the physical integrity of the enclosure. CHEMCENTRAL/Detroit shall submit to EPA and MDNR for review and approval plans for such repair or replacement in accordance with paragraph XII. *letter*

3. Within thirty (30) days of receipt of EPA and MDNR approval, CHEMCENTRAL/Detroit shall initiate the approved tank farm enclosure plan in accordance with the schedule specified in that plan.

VIII. LEAK CORRECTION AND REPORTING

Upon discovery of any leak, the tank(s) and/or associated piping shall be emptied immediately. Any leaks identified at any time shall be expeditiously corrected by CHEMCENTRAL/Detroit or the tanks or associated piping shall be removed from service in accordance with requirements of applicable law. Any such leak shall be reported to EPA and MDNR within eight (8) hours of discovery. Within ten (10) days of identification of any leak, CHEMCENTRAL/Detroit shall submit a report describing the location, cause, and size of all leaks identified in tanks or pipes and the response taken to eliminate the leak, and measures taken to recover any contents released to the environment.

IX. GROUNDWATER CONTAMINATION DEFINITION

For purposes of this Consent Judgment, groundwater contamination in the enclosure, the water table aquifer, and the lower aquifer is defined as the existence of any of the compounds identified in Appendix D in concentrations exceeding levels specified in Appendix D.

X. LOWER AQUIFER ASSESSMENT

1. Within five (5) days of the installation of purge wells pursuant to paragraph XI, CHEMCENTRAL/Detroit shall install three wells into the confined aquifer (hereinafter "the lower aquifer") located below the water table aquifer. The three wells will be located in areas of no or minimal water table aquifer contamination.

After installation of three wells, CHEMCENTRAL/Detroit shall determine the following:

- / a. Potentiometric surface (water level) of the lower aquifer.
- / b. Lower aquifer permeability.

✓ c. Groundwater flow rate and direction of flow in the lower aquifer.

✓ d. Groundwater quality through sampling and analyzing the downgradient well for priority pollutants and all wells for TOH and TOC.

e. A schedule for completion of a. through d. above.

2. Within ninety (90) days of the installation of the lower aquifer wells, CHEMCENTRAL/Detroit shall submit a plan to EPA and MDNR to further determine the existence and extent of any groundwater contamination in the lower aquifer. Such plan shall include the following:

a. Location of test well(s).

b. Size and depth of test wells and screens and screen intervals.

c. Sampling procedure.

d. Analytical protocols for analysis of priority pollutants.

e. A schedule for implementation of the plan.

Within ten (10) days of enclosure of the tank farm and receipt of EPA and MDNR approval of the plan, CHEMCENTRAL/Detroit shall implement the plan.

XI. REMEDIAL ACTIONS

1. Within thirty (30) days of the entry of this Consent Judgment, CHEMCENTRAL/Detroit shall submit to EPA and MDNR for review and approval a Remedial Action Plan. Implementation of approved portions of remedial action plans shall be initiated within fifteen (15) days of approval or acceptance. The Remedial Action Plan shall include a schedule for implementation of the following remedial measures:

a. Restoration of Zink Drain through:

i. Removal of all black colored and/or light textured organic material lying on top of the gray naturally occurring mineral sediments of Zink Drain from Huron River Drive to Wayne Road. "Black," for these purposes, shall mean all such materials whose color is darker than the N4/ value on the Gley color chart. (Munsell Color Company, 2441 N. Calvert Street, Baltimore, Maryland 21218). and

ii. Disposal of excavated material in accordance with applicable federal and state law.

b. Removal and disposal in accordance with applicable federal and state law of:

i. The contaminated soils previously excavated during the installation of the interceptor trench, recovery well, and the dredging of Zink Drain. The location of such soil is designated in Appendix C. and

ii. Any soil excavated from Zink Drain.

c. Description of removal equipment and procedures to be used in sediment and soil removal.

d. The following provisions for purging of groundwater:

i. Installation and operation of the groundwater capture and removal well system described in Appendix F. and

ii. Operation of all such capture wells shall commence no later than March 1, 1983.

iii. In the event that groundwater

contamination is found as defined in paragraphs IX. and X., provisions for the installation and operation of a groundwater capture well system for the lower aquifer.

e. Treatment of contaminated groundwater from the enclosure, the water table aquifer, and the lower aquifer, if necessary to meet treatment effluent standards specified in Appendix E. including:

i. Skimming of the hydrocarbon phase of the groundwater recovered in the on site recovery well.

ii. Accumulation in tanks of groundwater captured through operation of the capture wells referenced in paragraph XI.1.d. above and the on site recovery well.

iii. Treatment of the groundwater such that the effluent contaminant levels are below concentrations specified in Appendix E.

iv. Description of the operation and maintenance procedures for the treatment system(s) to be followed so that the system(s) achieve(s) optimum removal efficiency for contaminants.

v. Contingency provisions in the event of operational problems with the treatment system(s) to provide treatment of the purged groundwater to the levels specified in Appendix E.

vi. Installation of a continuous flow measuring device to monitor effluent from the treatment system.

vii. Disposal of treated groundwater to

the Wyandotte waste water treatment plant.

viii. Disposal or sale in accordance with applicable federal and state law of all treatment residuals from the groundwater treatment processes described in i. and iii. above.

ix. Provisions to prevent the release, if any, of contaminants, pollutants, and products from the treatment system(s) to air, water, and soil.

2. Implementation of approved remedial actions which require a license, permit, easement, or other authorization shall commence upon receipt by CHEMCENTRAL/Detroit of necessary licenses and permits from all federal, state, and local authorities having responsibility or jurisdiction and upon securing from private persons necessary easements or other authorizations for such portion. CHEMCENTRAL/Detroit shall immediately apply for and seek to obtain all necessary licenses, permits, easements, or other authorizations and shall expeditiously pursue such licenses, permits, easements, and other authorizations until they are obtained or granted. In the event of a denial or a refusal to grant a necessary license, permit, easement, or other authorization CHEMCENTRAL/Detroit shall immediately notify EPA and MDNR and, if necessary, invoke the jurisdiction of this Court to resolve the matter. EPA shall insure timely action on any permits sought by CHEMCENTRAL/Detroit within EPA jurisdiction which are necessary for compliance with this Consent Judgment. MDNR shall insure timely action on any licenses or permits sought from MDNR by CHEMCENTRAL/Detroit which are necessary for compliance with the Consent Judgment. Remedial actions shall be completed in accordance with the approved schedules.

3. Any additional or replacement storage tanks placed in service by CHEMCENTRAL/Detroit at the Site shall include impervious secondary containment.

XII. PERIODIC MONITORING AND MAINTENANCE PLAN

Within thirty (30) days of entry of this Consent Judgment CHEMCENTRAL/Detroit shall submit to EPA and MDNR for review and approval a Monitoring and Maintenance Plan.

1. Elements of the plan pertaining to monitoring shall include, at a minimum, the following:

a. Provisions for the monitoring of all storage tanks and associated piping, including, at a minimum, the following:

i. Monitoring specifically designed to detect all loss of product or other contents from the tanks and associated piping within seven (7) days of the occurrence;

ii. Monitoring shall continue until such time as the tanks or pipes are no longer used to store or transmit product and are emptied and removed from service in accordance with applicable law;

iii. Persons performing the monitoring; and

iv. A schedule for performing the monitoring and for reporting monitoring results.

b. Provisions for monitoring of groundwater inside the enclosure designed to detect any loss of product or other contents from the tanks and associated piping within seven (7) days of the occurrence.

c. Provisions for the installation of monitoring wells into the water table and lower aquifers to

test periodically for any release of product or contaminated groundwater from the enclosure.

✓ d. Provisions for the installation of monitoring wells into contaminated aquifers to evaluate the effectiveness of groundwater purging required under this Consent Judgment. Such provisions shall include those requirements stated in paragraph XI.1.d.

✓ e. Provisions for the monitoring of Zink Drain surface water to evaluate the effectiveness of remedial measures required under this Consent Judgment.

f. Provisions for supplying the following information to EPA and MDNR:

✓ i. Engineering specifications and a timetable for installation of all wells.

✓ ii. Number and location of wells.

✓ iii. Sampling to be conducted at wells and Zink Drain locations.

✓ iv. Sampling to be conducted at specified locations.

✓ v. Sampling protocols.

✓ vi. Frequency and duration of sampling.

✓ vii. Person(s) performing the sampling and analysis.

✓ viii. Analytical protocols.

✓ ix. Quality assurance and quality control procedure; and

✓ x. Schedule for reporting periodic monitoring results.

2. Elements of the plan pertaining to operation and maintenance shall include, at a minimum, the following:

a. Provisions specifying steps to be taken in

the permanent removal from service of all tanks and associated pipes in accordance with applicable federal, state, and local law.

✓ b. Provisions for maintenance of the purge system, cap, and flushing system (if installed) and walls of the enclosure.

✓ c. Provisions for the proper operation and maintenance of all sampling and remedial action equipment, including wells, pumps, skimmers, and water treatment system(s).

✓ d. Provisions for contingency-action should any well or sampling and remedial action equipment become inoperable such that remedial action cannot proceed in accordance with the requirements of the Consent Judgment.

✓ e. Identification of persons responsible for operation and maintenance of wells and sampling and remedial action equipment; and

✓ f. Frequency of maintenance activities.

3. Upon receipt of EPA and MDNR approval of the Monitoring and Maintenance Plan or portions thereof, CHEMCENTRAL/Detroit shall implement those portions, and submit results to EPA and MDNR in accordance with schedules set forth in the plan.

XIII. PIPP AND SPCC PLANS

CHEMCENTRAL/Detroit shall maintain, as required by applicable law, a Pollution Incident Prevention Plan (PIPP) and a Spill Prevention Control and Countermeasure Plan (SPCC).

XIV. REVIEW OF PLANS AND PRESUMPTION OF VALIDITY OF REQUIREMENTS

Any requirements for studies, data, information,

analyses, plans, and remedial measures required under this Consent Judgment shall be presumed to be necessary.

Whenever this Consent Judgment requires review and approval of plans by MDNR and/or EPA, such review shall be made expeditiously and approval shall not be unreasonably withheld. In the event of any disapproval, EPA and/or MDNR shall specify in writing the deficiencies of the plan and the necessary alterations to make the plan or procedure approvable. CHEMCENTRAL/Detroit shall then either incorporate the specified changes and resubmit the plan to EPA and MDNR within thirty (30) days of receipt of such disapproval unless the parties agree to a longer period of time, or shall make application to this Court and demonstrate, by a preponderance of the evidence, that the deficiencies or alterations specified by EPA and/or MDNR involve activities which are not reasonably necessary or prohibit activities which are reasonably necessary. CHEMCENTRAL/Detroit must make an application for such a determination within thirty (30) days of receipt by CHEMCENTRAL/Detroit of notice of the deficiency or alteration. CHEMCENTRAL/Detroit's failure to resubmit the plan or apply to this Court within thirty (30) days of receipt or any longer period of time agreed upon by the parties shall be deemed to be an acceptance by CHEMCENTRAL/Detroit of the plan as modified by EPA or MDNR. Upon EPA and MDNR approval of the plan or upon Court approval or modification of the plan or upon acceptance of the plan by CHEMCENTRAL/Detroit, CHEMCENTRAL/Detroit shall proceed to implement the plan according to the approved schedule and within fifteen (15) days of the approval or acceptance. The approval of the Director of MDNR for the State of Michigan and the approval of the Water Division, Region V, Environmental Protection Agency shall be deemed the approval necessary to satisfy review requirements set forth in this Consent Judgment and attached appendices.

XV. DELAY OF PERFORMANCE

CHEMCENTRAL/Detroit shall use its best efforts to avoid or minimize any delay in the performance of its obligations and undertakings pursuant to this Consent Judgment. If a delay occurs or if CHEMCENTRAL/Detroit anticipates a delay in compliance with or performance of its obligations or undertakings, CHEMCENTRAL/Detroit shall immediately notify EPA and MDNR in writing of the nature, cause and anticipated length of the delay and the steps which CHEMCENTRAL/Detroit has taken or will take to avoid or minimize the delay. For any reasonable delays which are caused by events or circumstances beyond CHEMCENTRAL/Detroit's control or which are due to delay occasioned by EPA or MDNR the relevant period of time and/or performance date and any affected subsequent periods of time and/or performance dates shall be extended by the same amount of time as the number of days of the delay.

XVI. RESPONSIBILITY OF CHEMCENTRAL

7/1/82 CHEMCENTRAL/Detroit is ultimately responsible for designing and implementing all remedial and monitoring measures and activities outlined in this Consent Judgment.

XVII. PROGRESS REPORTS

CHEMCENTRAL/Detroit shall submit written progress reports to the persons designated pursuant to paragraph XVIII for the United States and the State of Michigan concerning activities undertaken pursuant to any plan approved under this Consent Judgment within ten (10) days after the first day of each month during which such activities are in progress or upon such other schedule to which the parties may agree.

Upon completion of the activities required in this Consent Judgment, CHEMCENTRAL/Detroit shall submit a final written report to the persons designated pursuant to paragraph

XVIII for the United States and the State of Michigan certifying that such activities have been completed in full satisfaction of the requirements of this Consent Judgment.

XVIII. PARTIES TO BE NOTIFIED

Whenever, under the terms of this Consent Judgment, a report, notice, approval, or other document is required to be forwarded by one party to another, it shall be sent by certified or registered mail to the individuals at the addresses specified below, unless those individuals or their successors give notice in writing to the other party of another individual designated to receive such communications. Reports, notices, approvals, penalties, or other documents shall be sent to the following individuals at the addresses specified.

As to the United States: Regional Administrator
 United States Environmental
 Protection Agency
 Region V
 Attention: Water Division/Compliance
 Section
 230 South Dearborn Street
 Chicago, Illinois 60604

As to the State: Dr. Howard Tanner, Director
of Michigan Michigan Department of Natural Resources
 Box 30028
 Lansing, Michigan 48909

As to CHEMCENTRAL/
Detroit: Mr. William Shook
 CHEMCENTRAL/Detroit Corporation
 13395 Huron River Drive
 Romulus, Michigan 48174

and Mr. Louis M. Rundio, Jr.
 McDermott, Will & Emery
 111 West Monroe
 Chicago, Illinois 60603

and William D. Mulliken
 General Counsel
 CHEMCENTRAL Corporation
 7050 W. 71st Street
 Chicago, Illinois 60638

CHEMCENTRAL/Detroit shall be deemed to have received reports, notices, approvals and all other documents on the date of

receipt by CHEMCENTRAL/Detroit.

XIX. ENTRY ONTO SITE

Upon entry of this Consent Judgment, EPA, MDNR, their employees, contractors, and consultants, shall have authority to enter the Site at reasonable times for the purpose of: (a) inspecting records, operating logs, and contracts relative to matters covered by this Consent Judgment; (b) monitoring the progress of CHEMCENTRAL/Detroit in designing and implementing plans and carrying out remedial measures; (c) collection of samples; and (d) verifying any data or information submitted by CHEMCENTRAL/Detroit to EPA or MDNR in accordance with the implementation of this Consent Judgment. EPA and MDNR shall have authority to order suspension of activities undertaken pursuant to this Consent Judgment for such time as is necessary to protect human health or the environment. This paragraph shall not in any way limit any entry or inspection authority EPA or MDNR may otherwise have pursuant to any federal or state statute or regulation. If EPA or MDNR obtains any samples, prior to leaving the premises, the EPA or MDNR employee, contractor, or consultant shall give to CHEMCENTRAL/Detroit a receipt describing the sample obtained and a split or equivalent sample to that retained by EPA or MDNR. If any analysis is conducted on such samples by any party, a copy of the results of such analysis shall be furnished promptly to all other parties to this Consent Judgment.

XX. OTHER APPLICABLE LAW

All actions required to be taken pursuant to this Consent Judgment shall be undertaken in accordance with the requirements of all applicable local, state, and federal laws, including the Occupational Safety and Health Act, 29 U.S.C. §651 et seq., and regulations promulgated thereunder. This

Consent Judgment shall in no way release CHEMCENTRAL/Detroit from any regulations or requirements under the Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq., the Clean Water Act, 33 U.S.C. §1251 et seq., the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §9601, or any other applicable federal or state laws or regulations except that CHEMCENTRAL/Detroit is released herein and hereby as specifically provided in paragraph XXVII. Nothing contained in this Consent Judgment shall operate as a permit authorizing the discharge of pollutants pursuant to the National Pollutant Discharge Elimination System, Section 402 of the Clean Water Act, 33 U.S.C. §1342.

XXI. PUBLIC AVAILABILITY OF INFORMATION

The sampling and monitoring data and hydrogeological information submitted to EPA and MDNR pursuant to this Consent Judgment shall not be considered confidential. All other data, information, plans or portions of plans, and other documents produced by CHEMCENTRAL/Detroit in the process of implementing this Consent Judgment and submitted to EPA and MDNR shall be available to the public unless identified as confidential by CHEMCENTRAL/Detroit in accordance with 40 C.F.R. Part 2 or applicable Michigan law. Data, information, plans or portions of plans, and other documents not determined to be confidential by EPA or MDNR will be disclosed in accordance with the provisions of 40 C.F.R. Part 2 or applicable Michigan law.

XXII. FINANCIAL RESPONSIBILITY

CHEMCENTRAL/Detroit agrees to fund all capital expenditures and to pay all expenses necessary to develop and implement the plans required under this Consent Judgment. CHEMCENTRAL/Detroit further agrees that in order to insure the funding of plans and remedial measures, CHEMCENTRAL/Detroit

shall secure performance guarantees in an amount equal to one hundred percent (100%) of the estimated cost of performing each of the plans required under paragraphs VII, X, XI and XII hereof. Such guarantees shall be obtained not later than sixty (60) days after the final approval by both EPA and MDNR or resolution of any dispute by this Court of each of the plans required under paragraphs VII, X, XI and XII hereof, and shall be maintained in full force and effect until the work is completed as required by this Consent Judgment. Provided however, that as capital expenditures are made and as expenses are paid, the amount of any involved performance guarantees shall be reduced on a dollar for dollar basis. Copies of such performance guarantees shall be provided to the EPA and MDNR. Should CHEMCENTRAL/Detroit be unable to obtain such guarantees, CHEMCENTRAL/Detroit shall commit one-third (1/3) of the estimated cost of the approved plan to be held in escrow for the State of Michigan until such performance guarantee is obtained or is no longer required under this Consent Judgment.

CHEMCENTRAL/Detroit shall maintain an escrow account or instrument dedicated to meeting the expenses of maintenance, operation, replacement, repair, and the like. CHEMCENTRAL/Detroit shall insure that such escrow account or instrument will contain at a minimum an amount equal to the cost of one year's maintenance, operation, replacement, repair, and the like and shall provide that such account or instrument requires both the signatures of the MDNR and CHEMCENTRAL/Detroit for withdrawal of the principal amount or any portion thereof.

XXIII. CONVEYANCE OF INTEREST IN PROPERTY

No conveyance of title, easement or other interest in the property referred to herein as the Site shall be consummated by CHEMCENTRAL/Detroit or subsequent holders of any interest in the property without adequate and complete provisions

for the full implementation of this Consent Judgment. Within thirty (30) days of the entry of this Consent Judgment, CHEM-CENTRAL/Detroit shall prepare and execute a restriction applicable to the deed(s) to the Site, in accordance with Michigan law, that will notify any potential purchaser of the property that (a) the land has been used for the underground storage of hazardous substances and (b) the use of the property must not be allowed to disturb or adversely affect the integrity of any containment system, treatment system, or monitoring system installed pursuant to this Consent Judgment. The Attorney General of the State of Michigan will record this deed restriction, said restriction shall remain recorded unless CHEMCENTRAL/Detroit or a subsequent holder of any interest in the property shall demonstrate to this Court that the containment, treatment, and monitoring systems are no longer reasonably necessary to prevent a release of a hazardous substance to the environment.

XXIV. PAYMENTS

CHEMCENTRAL/Detroit shall pay to the State of Michigan the amount of \$100,000 as reimbursement for expenses incurred and to be incurred in connection with this Consent Judgment and as damages to the natural resources of the State of Michigan. CHEMCENTRAL/Detroit shall pay to the Hazardous Substance Response Trust Fund the amount of \$140,000 as reimbursement for expenses incurred and to be incurred in connection with this Consent Judgment.

XXV. RETENTION OF JURISDICTION

This Court shall retain jurisdiction of this matter.

XXVI. NONCOMPLIANCE PAYMENT

Upon demand by EPA, CHEMCENTRAL/Detroit shall pay to

the United States up to five hundred dollars (\$500) per day for each of the first thirty days that it fails to comply with any schedule set forth in plans approved pursuant to this Consent Judgment, and one thousand dollars (\$1,000) per day thereafter. In addition, upon demand by MDNR, CHEMCENTRAL/Detroit shall pay to the State of Michigan up to five hundred dollars (\$500) per day for each of the first thirty days that it fails to comply with any schedule set forth in plans approved pursuant to this Consent Judgment and one thousand dollars (\$1,000) per day thereafter. Within thirty (30) days of receipt of any such demand CHEMCENTRAL/Detroit shall either make payment to EPA and/or MDNR or shall petition this Court for relief from the amount of any such demand or for a determination as to whether any of this delay was excusable under the terms of paragraph XV or both. CHEMCENTRAL/Detroit shall bear the burden of demonstrating that in the assessment of such a demand the EPA or MDNR abused its discretion. These payments shall be in addition to and shall not preclude the use of any other remedies or sanctions which may be available to EPA and MDNR by reason of CHEMCENTRAL/Detroit's noncompliance with the provisions of this Consent Judgment.

XXVII. SETTLEMENT

This Consent Judgment and the amounts paid under paragraph XXIV are in full settlement, discharge, and release of all civil claims of and remedies available to the United States and the State of Michigan based upon facts alleged against CHEMCENTRAL/Detroit, its officers, directors, employees, agents, servants, and its predecessor, Eaton Chemical Corporation, for any and all civil claims in the above-captioned action regarding any migration or discharge of any materials at, around, or from the Site occurring prior to the

effective date of this Consent Judgment.

XXVIII. TERMINATION

7/12/79
The provisions of this Consent Judgment shall terminate upon CHEMCENTRAL/Detroit's receipt of written notice from EPA and MDNR that except for paragraph VII.2. all remedial, testing, and monitoring measures have been successfully completed or upon determination of this Court that except for paragraph VII.2. all remedial, testing, and monitoring measures have been successfully completed. The provisions of paragraph VII.2. shall terminate upon CHEMCENTRAL/Detroit's demonstration to the satisfaction of the EPA and MDNR that the encapsulated area as shown in Appendix C is no longer an actual or potential source for releases of contaminants to the environment or upon demonstration to this Court that the encapsulated area as shown in Appendix C is no longer an actual or potential source for releases of contaminants to the environment.

XXIX. INTERPRETATION OF DISPUTES

Except as otherwise specifically provided in paragraphs XIV, XXVI and XXVIII of this Consent Judgment, if EPA, MDNR, and CHEMCENTRAL/Detroit cannot agree on the interpretation of the terms and conditions of this Consent Judgment, any one or more of the parties, upon ten (10) days written notice to the other parties, may petition this Court for resolution of the matter. Provided however, if substantial and imminent danger to human health or the environment is alleged, such notice is not required.

XXX. CONSTRUCTION

This Consent Judgment, in whole or in part, shall not constitute any admission of fact or law or evidence of same,

nor any admission of any violation of any regulation or law. The parties to this Consent Judgment may rely upon this Consent Judgment, in whole or in part, only in this action and proceedings hereunder. It is intended that this Consent Judgment, in whole or in part, shall neither create rights in nor affect rights of persons or entities who are not parties to this Consent Judgment.

XXXI. DELAY IN PERFORMANCE PENDING APPEAL

In the event any appeal is taken with respect to all or any portion of this Consent Judgment by any person who is not a signatory to it, any signatory to this Consent Judgment may petition this Court for appropriate stays and extensions of those compliance dates which may be affected by the outcome of any appeal taken.

Respectfully submitted,

CHEMCENTRAL/Detroit
By its Attorneys

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1982. Dated and entered this 10 day of Nov,

JAMES P. CHURCHILL
UNITED STATES DISTRICT JUDGE

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APPENDIX A

LEGAL DESCRIPTION OF SITE

Part of the Northwest 1/4 of Section 29, Township 3 South, Range 9 East, City of Romulus, Wayne County, Michigan, described as:

Part of the Northwest 1/4 of Section 29, Township 3 South, Range 9 East: Beginning at a point in the East line of Huron River Drive (66.00 feet in width), said point being distant South 89 degrees 34 minutes 00 seconds East 33.00 feet and due South 483.00 feet from the Northwest corner of said Section 29; thence North 84 degrees 44 minutes 30 seconds East a distance of 300.00 feet to a point; thence North 83 degrees 22 minutes 00 seconds East a distance of 400.00 feet to a point; then South 89 degrees 41 minutes 30 seconds East a distance of 200.00 feet to a point; thence South 0 degrees 46 minutes 10 seconds West a distance of 451.96 feet to a point; thence North 89 degrees 41 minutes 30 seconds West a distance of 890.00 feet to a point in the East line of said Huron River Drive (66.00 feet in width); thence due North, on and along the East line of said Huron River Drive, a distance of 374.50 feet to the place of beginning; containing an area of 8.613499 acres, more or less; TOGETHER WITH any right, title, or interest which The Chesapeake and Ohio Railway Company may have in Huron River Drive West of and adjoining the above-described parcel of land.

And, also:

Beginning at a point on the South line of Wabash Road, 66 feet wide, distant due South 33.00 feet and South 89 degrees, 34 minutes, 00 seconds East 287.80 feet from the Northwest corner of Section 29, Township 3 South, Range 9 East; thence South 89 degrees, 34 minutes, 00 seconds East 1370.35 feet along said South line; thence South 0 degrees, 05 minutes, 22 seconds West 279.10 feet; thence South 59 degrees, 25 minutes, 16 seconds West 562.51 feet; thence 233.84 feet along the arc of a curve concave to the Northwest, having a radius of 440.40 feet and a chord bearing South 74 degrees, 37 minutes, 56 seconds West 231.10 feet; thence North 89 degrees, 42 minutes, 30 seconds West 25.00 feet; thence North 0 degrees, 46 minutes, 10 seconds East 426.55 feet; thence 201.20 feet along the arc of a curve concave to the North, having a radius of 651.05 feet and a chord bearing North 80 degrees, 52 minutes, 42 seconds West 200.40 feet; thence 46.01 feet along the arc of a curve concave to the North, having a radius of 588.69 feet and a chord bearing North 70 degrees, 11 minutes, 59 seconds West 46.00 feet; thence North 67 degrees, 57 minutes, 38 seconds West 434.06 feet to the point of beginning.

Excepting from the above-described properties:

Part of the N.W. 1/4 of Section 29, Township 3 South, Range 9 East, City of Romulus, Wayne Co., Michigan, described as beginning at a point on the south line of Wabash Road, 66 ft. wide, distant due south 33 feet and South 89 degrees 34 minutes 00 seconds East 287.80 feet from the Northwest corner of Section 29, Township 3 South, Range 9 East; thence South 89 degrees 34 minutes 00 seconds East 555.00 feet along said south line; thence South 36 degrees 21 minutes 16 seconds West 210.12 feet;

thence 30 feet along the arc of a curve concave to the north, having a radius of 588.69 feet and a chord bearing North 69 degrees 25 minutes 14 seconds West 30.00 feet; thence North 67 degrees 57 minutes 38 seconds West 434.06 feet to the point of beginning. Containing 1.09 Acres more or less.

And also excepting from the above-described properties:

Part of the Northwest 1/4 of Section 29, Township 3 South, Range 9 East, Romulus Township (now City of Romulus), Wayne County, Michigan. Described as: Commencing at the Northwest corner of said Section 29; thence South 89 degrees 34 minutes 00 seconds East along the North line of Section 29, a distance of 1283.20 feet to the point of beginning; thence continuing South 89 degrees 34 minutes 00 seconds East 375.00 feet; thence South 00 degrees 05 minutes 22 seconds West 259.78 feet; thence South 59 degrees 25 minutes 16 seconds West 406.90 feet; thence North 00 degrees 05 minutes 22 seconds East 231.96 feet; thence North 89 degrees 40 minutes 28 seconds West 25 feet; thence North 00 degrees 05 minutes 22 seconds East 237.51 feet to the point of beginning. Containing 133,544 square feet or 3.0658 Acres Gross (121,170 square feet or 2.7817 Acres Net) more or less, excluding the North 33.00 feet thereof as Wabash Road. SUBJECT TO all easements, rights of ways and restrictions of record. Also subject to the use of an easement 30 feet wide for railroad purposes recorded in Liber 20767 Page 385 Wayne County Record. Further subject to all reservations, exceptions, easements and restrictions of record, to zoning ordinances and to subdivision regulations and laws, encroachments which might be revealed from an inspection of the premises and existing ways and servitudes, howsoever created, including but not limited to: 1. The drainage rights attached to the Zink Drain; 2. Agreement dated October 26, 1960, for the occupancy of a drain pipe owned by Bethlehem Steel Corporation; 3. The ownership in all the tracks and related facilities within an area of the premises herein conveyed, as shown shaded (blue) on a Drawing No. 80118 which tracks and facilities are the property of The Chesapeake and Ohio Railway Company, and for that certain revertible 30-foot wide easement over the land supporting said tracks and facilities for the continued use, operation and maintenance of such track and facilities and the right to remove same on cessation of use.

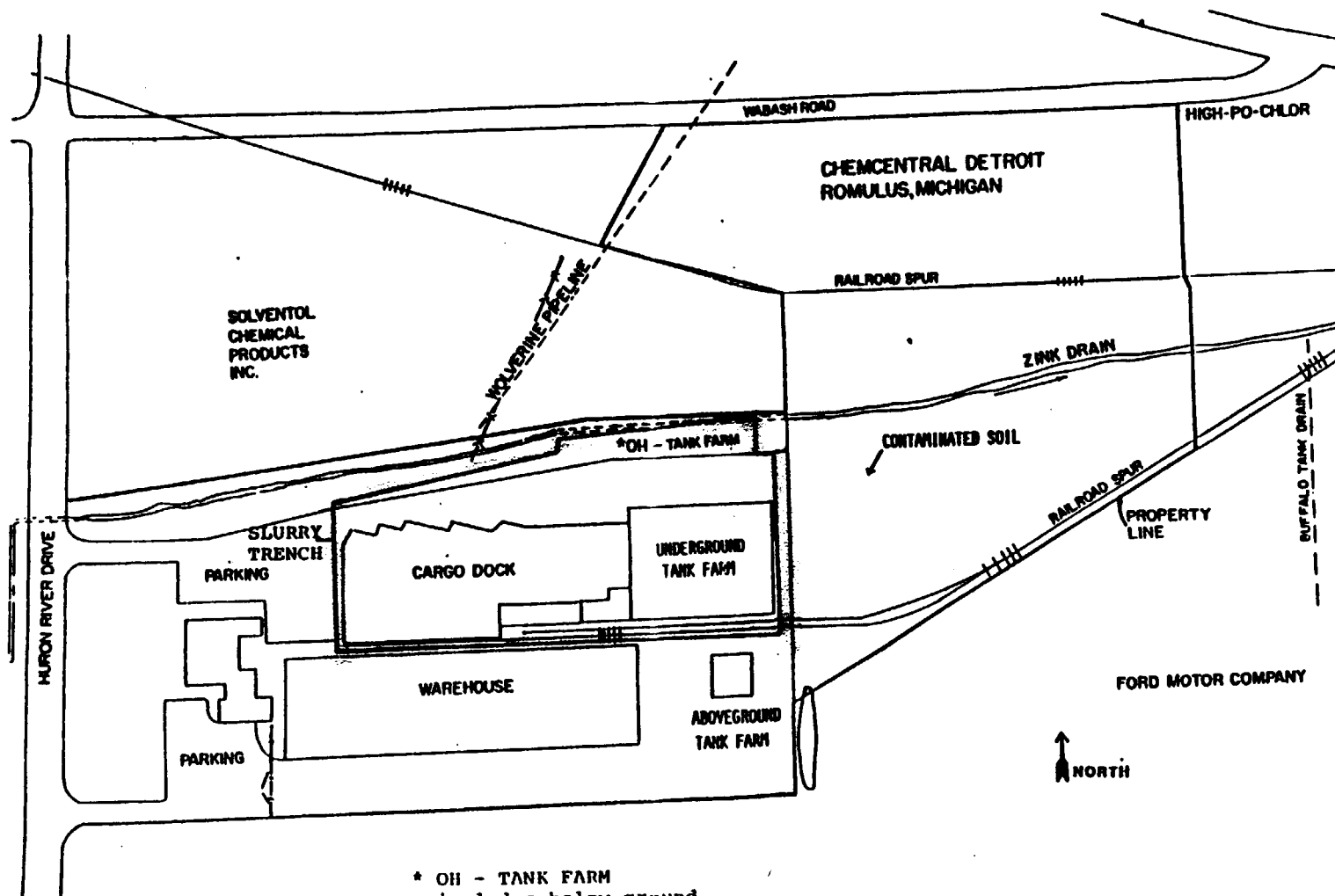
APPENDIX B

For purposes of paragraph V.3. of the Consent Judgment, the residences at the following addresses shall be deemed to have a drinking water well downgradient and within 250 feet of the site:

non-responsive



Within thirty (30) days of entry of this Consent Judgment, CHEMCENTRAL/Detroit shall notify the persons residing at and/or the owner of the residence at each of the above addresses that CHEMCENTRAL/Detroit will provide a connection for the residence to the City of Romulus water supply system.



* OH - TANK FARM
includes below ground
tanks 0111 through 0611

APPENDIX D

GROUNDWATER CONTAMINATION DEFINITION

<u>Compound</u>	<u>Level (ug/l)</u>
Benzene	6.6
1,1-Dichloroethylene	1
1,2-Dichloroethane	1
1,1,2-Trichloroethane	1
Chloroform	1
Trichloroethylene	4
Tetrachloroethylene	2
Bis-(2-ethyl hexyl) phthalate	10
Methylene chloride	10

Protocols for Sampling and Analysis for the above
contaminants shall be developed in accordance with:

Guidelines for Establishing Test Procedures
for the Analysis of Pollutants

Fed. Reg. Vol. 44, No. 233

Monday, December 3, 1979

EPA 40 CFR Part 136 (FRL 1323 - D)

Methods 601, 602, and 606 as appropriate shall
be used to sample for and analyze for the
above compounds.

APPENDIX E

GROUNDWATER TREATMENT EFFLUENT STANDARDS

1. Groundwater treatment effluent shall not exceed the following concentrations:

Volatile Organics

1, 1 - dichloroethylene	20 ug/l
1, 2 - dichloroethane	20 ug/l
1, 1, 2 - trichloroethane	20 ug/l
chloroform	20 ug/l
trichloroethylene	20 ug/l
tetrachloroethylene	20 ug/l
vinyl chloride	20 ug/l
benzene	20 ug/l
1, 1, 1 - trichloroethane	-
methylene chloride	-
ethyl benzene	-
toluene	-

However, the sum total of the above shall not, in any event, exceed 100 ug/l.

Bis-(2-ethyl hexyl) phthalate shall not exceed .05 mg/l. Isopropyl alcohol shall not exceed 65 mg/l. Naphthalene shall not exceed .05 mg/l. COD shall not exceed 7,000 mg/l.

2. After the groundwater treatment system(s) has (have) been in full operation for sixty (60) days, CHEMCENTRAL/Detroit shall submit to EPA and MDNR a final engineering evaluation of the effluent concentrations the treatment system can achieve operating to maximize contaminant removal efficiency. CHEMCENTRAL/Detroit shall operate and maintain the treatment system(s) to achieve this contaminant removal efficiency. However, in no event shall effluent concentrations exceed the limitations set forth in the first paragraph of this Appendix.

APPENDIX F

GROUNDWATER CAPTURE SYSTEM

Objective

The primary design criterion of this system is that it capture the groundwater in the uppermost aquifer and within the area designated as the "capture zone" on Exhibit A and prevent migration away from this area, either by underground flow or discharge to Zink Drain.

Well Design and Installation

The purge wells will be constructed of four-inch by two-foot stainless steel well screens and four-inch black iron pipe casing. The wells will be installed using standard mud rotary methods. Screens will be set at the base of the uppermost aquifer and gravel packed. Typical well design is presented in Figure 1. The wells will be grouted at the surface with dry bentonite. All wells will be developed using the air-lift method. Water produced during development will be captured for suitable disposal.

Each well will be fitted with a pitless adaptor to allow underground installation of discharge lines, thereby eliminating freezing problems in cold weather. A small stainless steel submersible pump will be installed in each well. All wells will be connected to a header system laid out as appropriate to the final purge system configuration.

Purge Well Locations

No aquifer testing has been done to date, making determination of the exact number and locations of purge wells impossible at this time. Estimates of well performance have been made based on laboratory data and some assumptions. These estimates yield a system configuration as shown on Exhibit A,

comprising 13 wells including the existing capture well.

Continuous Operation of Purge Wells

When contaminant concentrations from six consecutive samples taken in sixty (60) day intervals from any purge well and from all monitoring wells in the cone of depression of such purge well are below levels described in Appendix D, operation of such purge well shall be discontinued.

If after discontinuance of the operation of a purge well due to contamination levels being below those specified in Appendix D and if a sample taken from that purge well or a monitoring well in the former cone of depression of such purge well shows contamination above concentrations specified in Appendix D, then a second sample shall be collected and analyzed within two (2) weeks. Operation of such purge well shall immediately resume if that second sample shows contamination above concentrations specified in Appendix D. A restarted purge well may be shut down only in accordance with the terms of the above paragraph, as if the well had never been shut down.

Purge System Testing and Configuration

The proposed approach to the system layout is to begin installing one well at each end of the capture zone. Temporary two-inch observation wells will be installed at distances of approximately five and fifteen feet from the purge wells unless existing wells can be used. An aquifer performance test will then be conducted on each well with water level measurements obtained from the two temporary observation wells, the purge well if possible and any other existing, nearby wells. The duration of the test will depend on the rate of response and the time required to reach steady-state conditions.

Theoretical considerations indicate that it may take as much as four days to achieve steady-state conditions. It is proposed that the first two aquifer tests be run for this period. The remainder of the tests will be of four to eight hours duration, which should be adequate to demonstrate similarity to the longer tests.

The data from each aquifer test will be analyzed to determine the radius of influence of the well and the relationship of drawdown with distance from the well for a given pumping rate.

A sample of the proposed type of analysis is presented in Exhibit B using hypothetical aquifer test data.

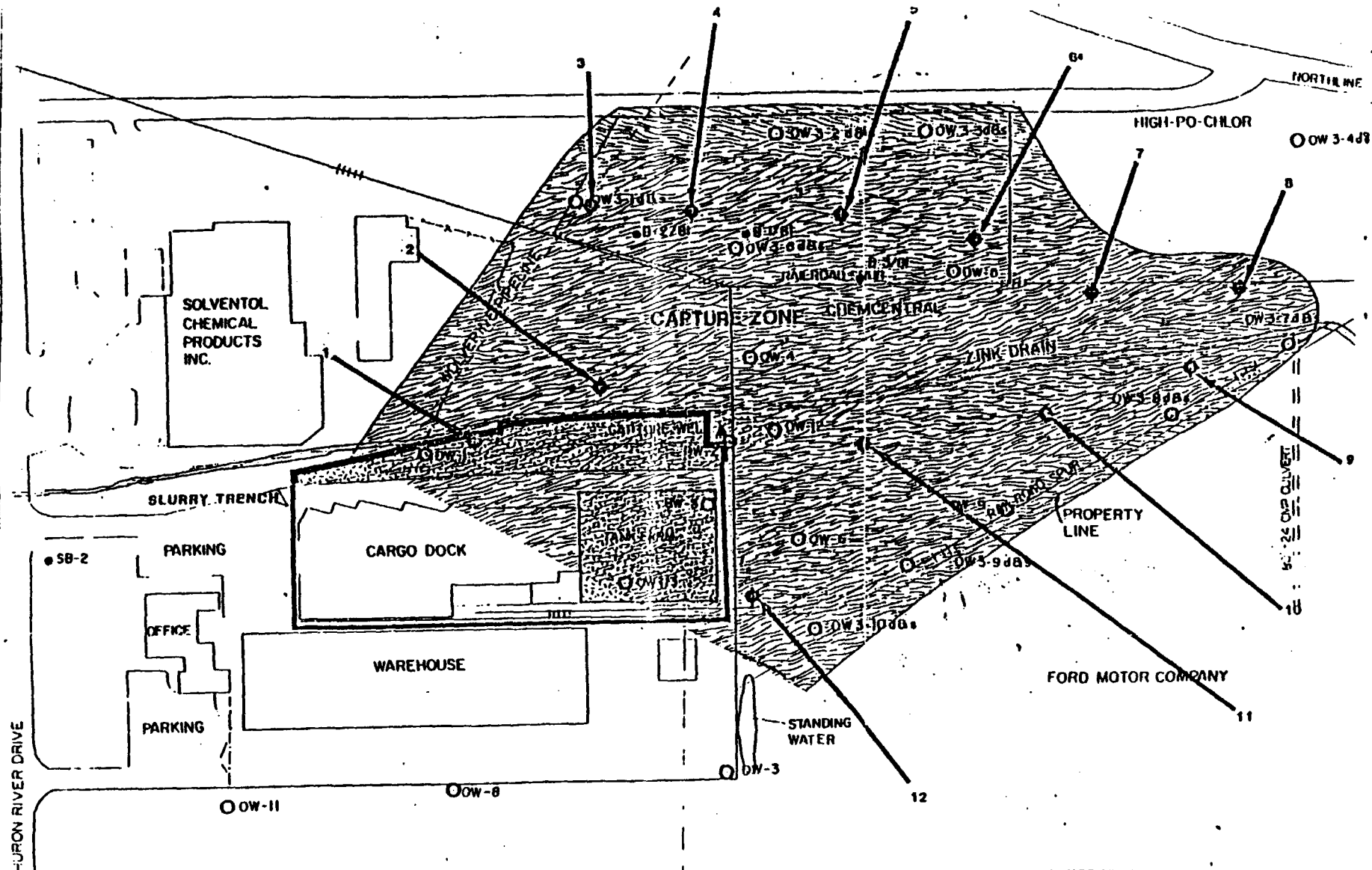


EXHIBIT B

SAMPLE OF PROPOSED TYPE OF ANALYSIS FOR WELL SPACING

Assumptions

Assume that an aquifer performance test is conducted at the CHEMCENTRAL/Detroit site. Further assume that the pumping rate is 0.5 gpm and that time drawdown observations are made in two observation wells at 5 and 10 foot distances from the pumping well. Because these wells are so close to the pumping well, they should be screened at the same interval as the pumping well to avoid partial penetration effects. The aquifer has a saturated thickness of 12 feet in the vicinity of these three wells. Assume that steady-state conditions are reached after 3.7 days and that at the time drawdown in the near observation well is 0.717 feet and in the distant well is 0.511 feet.

Analysis

Since the aquifer is under water table conditions, Jacobs' dewatering correction is applied to the data. Observed drawdowns are converted to confined equivalents resulting in a value for the near observation well of 0.696 feet and for the distant observation well 0.500 feet.

Now, the Theis equation may be applied to these data.

$$\begin{aligned} T &= \frac{527.7 \times Q \times \log r_2/r_1}{s_1 - s_2} \\ &= \frac{527.7 \times 0.5 \log 10/5}{.696 - .500} \\ &= 405.2 \text{ gpd/ft} \end{aligned}$$

Then, defining s_2 as zero, r_2 becomes the zero drawdown intercept (r_0)

$$\begin{aligned} r_0 &= r_1 \times 10^{Ts_1/527.7Q} \\ r_0 &= 58.6 \text{ feet} \end{aligned}$$

Then, the storage coefficient may be determined.

$$\begin{aligned}
 S &= \frac{0.3 T t}{r_o^2} \\
 &= \frac{0.3 \times 405.2 \times 3.7}{58.6^2} \\
 &= .131 \text{ ft}^3/\text{ft}^2/\text{ft}
 \end{aligned}$$

Using the values determined above, the Theis equation can be used to predict the non-linear portion of the distance drawdown curve.

$$\begin{aligned}
 s &= \frac{114.6 \times Q \times W(u)}{T} \\
 u &= \frac{1.87 \times r^2 \times S}{T t}
 \end{aligned}$$

The results of applying this equation are plotted in Figure 2.

Figure 2 can be used to estimate total drawdown at a point between the purge wells. For instance, if the total desired drawdown is 0.05 feet, wells can be spaced such that each nearby well contributes 0.025 feet of drawdown. From the figure, this distance is 83 feet. The maximum well spacing would then be twice this value, or 166 feet. Actual spacing would be determined by drawing 83 feet radii around both wells and adjusting the location of the one to be drilled so that the intersection of the radii fell on the capture zone boundary. Once the aquifer test data have been analyzed, the optimum pumping rate at each location can also be determined.

These analyses will be used to determine spacing to the next well to produce a minimum combined theoretical drawdown of 0.05 feet at every point along the boundary of the "capture zone" shown on Exhibit A. This standard is proposed as the primary design criterion for layout and operation of the purge system.

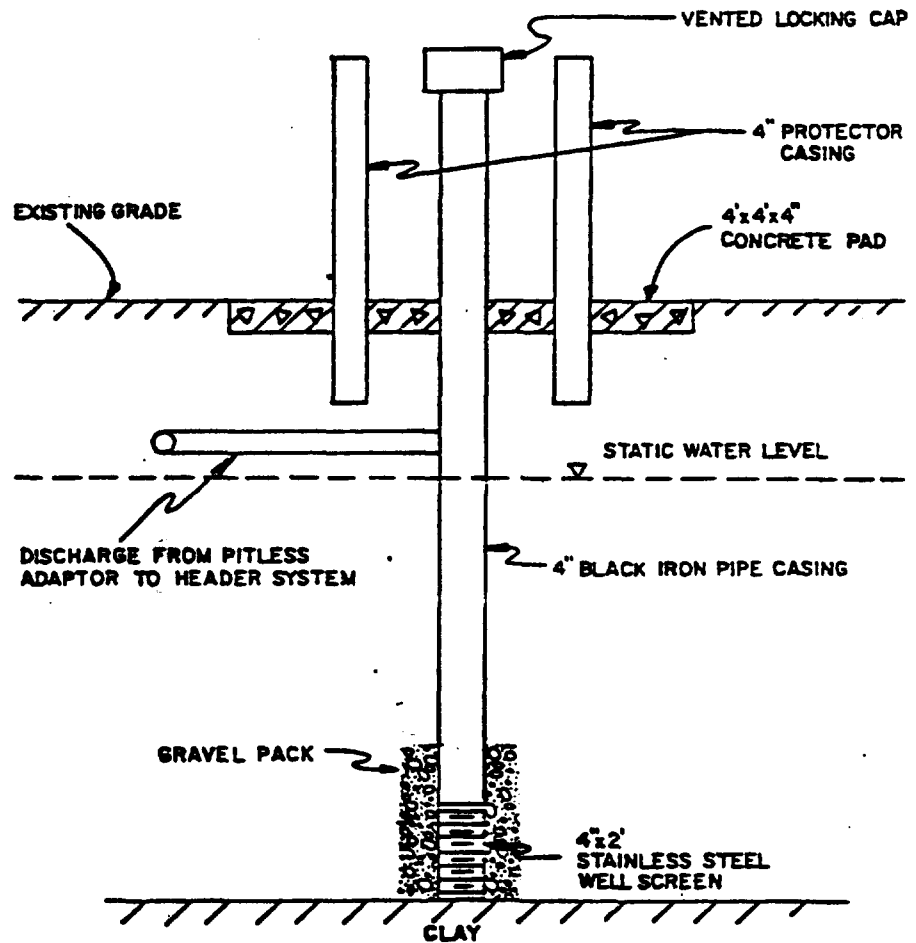
A number of observation wells used for aquifer testing will be located and installed to later serve as monitor wells, permitting verification of the system's performance in terms of both flow potentials and water quality. These data can be used to check actual versus theoretical performance,

eliminating the need for additional observation wells at the capture zone boundary.

Again, it should be noted that these wells may well prove capable of producing more or less than the design rate of 0.7 gpm. This fact will allow adjustment of pumping rates from various wells to produce a composite cone of depression of the required size and shape.

FIGURE 1

TYPICAL PURGE WELL DESIGN



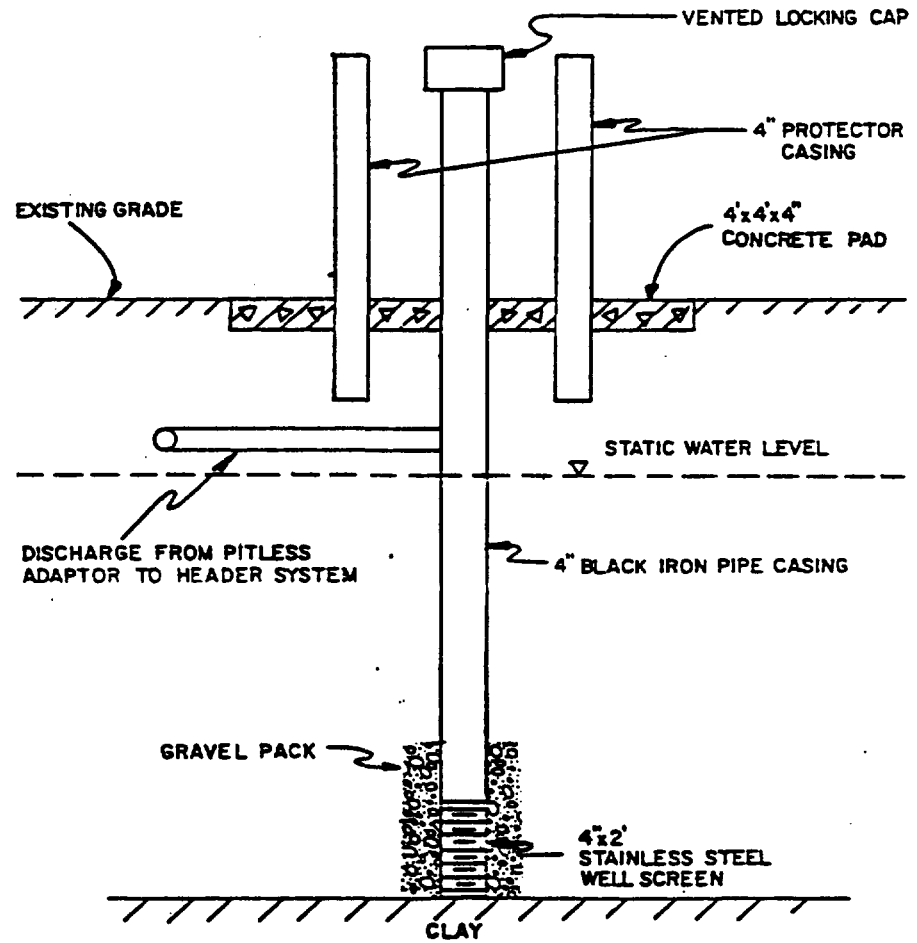
CHEM CENTRAL / DETROIT
ROMULUS, MI. FACILITY

CKECK CONSULTING SERVICES, INC.

FIGURE 1

FIGURE 1

TYPICAL PURGE WELL DESIGN



CHEM CENTRAL / DETROIT
ROMULUS, MI. FACILITY

KECK consulting services, inc.

FIGURE 1